

Predictive Maintenance: Infrared Update

Written by Terry Wireman, C.P.M.M. Editorial Director
Saturday, 01 April 2006 21:58

Thermographic inspections are an important part of any predictive maintenance program. This updated listing of suppliers is your guide to some of the top technologies and services in this "hot" market.



Thermal imaging has evolved into a valuable diagnostic tool for predictive maintenance. By detecting problems as they develop, thermography allows corrective actions to be taken before electrical, mechanical or process equipment fails. Thus, an infrared inspection (IR) program can provide a quick return on investment (ROI).

Not all companies are rapidly implementing infrared thermography programs, however. The barriers often cited tend to be in the financial arena—time, personnel, camera cost, training or contractor expense.

The most-mentioned aspect of the financial barriers is the lack of awareness of the benefits to the bottom line. In other words, companies do not understand cost avoidance accounting principles and are unwilling to invest in proper tools or to spend enough on contract inspections.

The main factor standing in the way of the effective use of infrared thermography technology appears to center on the cost of high-level education and training. It's not only training in thermography, but the other associated topics such as materials science, physics, and thermodynamics,"plus knowledge of how things work, from engines and turbines to buildings' thermal insulation or HVAC units," as one inspection service provider put it. This indicates that training beyond just the use of predictive tools is necessary for thermography to provide a return on investment.

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Advice from experts

IR experts surveyed for this article told us that users of infrared thermography should not try to immediately build a program that meets all of their needs. Rather, you should allow your program to be dynamic. Also, remember the importance of good record-keeping for trending purposes.

Be sure to communicate what your infrared program is contributing to the organization as well. "Tout your program, as often as you possibly can, in a professional, reasonable way, so that when money is tight, people will understand your value," was the advice from one provider.

A little outside-the-box thinking helps, too. "There are unique applications for nearly every industry, or even every facility. Sometimes it takes a little imagination, but the benefits can be staggering," one supplier told us.

Are you trying to justify an IR program? Comments like those from our surveyed suppliers should tell you that it is crucial to prepare a report on what additional repair costs and downtime losses are avoided when the infrared program finds and prevents an equipment or structure (roof) failure.

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New applications

Suppliers in this update also were asked about new applications for infrared thermography— in the plant and otherwise.

In plant applications, ITR cited monitoring of couplings and cranes, while Mikron Infrared noted monitoring of boiler tubes and continuous monitoring of electrical control panels.

Snell Inspections and Infrared Solutions found companies doing more building inspections, such as building envelope, HVAC and roof moisture surveys and inspections.

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Expert Infrared Inspections has performed inspections on a 4 MW extremeduty DC motor in a steel mill and on television-broadcasting equipment. Outside the plant, Cantronic Systems pointed to a particularly well-publicized new use of infrared thermography—the measuring of people’s body temperatures in airports during the frightening 2003 severe acute respiratory syndrome (SARS) outbreak.

Mikron Infrared cited an application in monitoring coal piles, while Infrared Research Inc. provided an environmental application that checked for illegal discharges in streams and waterways.

Monitoring of leaf temperatures to improve irrigation was an outside-the-plant application forwarded by IRISYS.

Other new applications included using infrared to spot rodent and termite problems (Infrared Solutions), for metal shredding systems (FLIR Systems) and security (ASC Systems).

Going forward

As thermographic technologies continue to mature, one thing’s for certain—more and more applications will become common.

The question that each company needs to ask itself today is: "are we applying the technology now, to avoid unnecessary downtime and prevent damage to our equipment?"

The following list of suppliers can help with the answer.

Detecting Problems Sooner

Newer tools and technologies have improved the accuracy of thermographic inspections. These days, an infrared inspection program can provide a company with a quick return on its investment. **MT**

Infrared thermography suppliers [Academy of Infrared Training](#) Bellingham, WA (888) 673-4743

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[ACTT/ Anderson Consulting, Training & Testing](#) Houston, TX (800) 836-7333

Advanced Electric La Crosse WI (866) 243-4863
[Advanced Infrared Resources](#) Yorba Linda CA (250) 579-2141
[AAIT/Allen Applied Infrared Technology](#) South River NJ (732) 238-8874

[BPC International Inc.](#) Tulsa OK (888) 962-4327
C&I Inspections LLC South Jordan UT (801) 718-4914
[Cantronic Systems Inc.](#) Coquitlam BC (866) 391-6970
[Colbert Infrared Services, Inc.](#) Seattle WA (800) 800-8178
[Electrophysics Corp.](#) Fairfield NJ (800) 759-9577
[Emerson Process Management](#) Knoxville TN (800) 675-8033
[EMP Engineering Services](#) Dresher PA (215) 793-9783
Expert Infrared Inspections Lombard IL (630) 935-7226
[FLIR Systems, Inc.](#) North Billerica A (800) 464-6372
Hot Spots Pocatello ID (208) 232-2695
[HSB Thermography Services](#) Alexandria VA (800) 231-0907
[Infrared Consulting Services](#) Minneapolis MN (888) 925-4404
[Infrared Predictive Surveys](#) Frederick MD (800) 869-3720
[Infrared Research Inc.](#) Rossville GA (800) 866-7480
[Infrared Solutions, Inc.](#) Plymouth MN (800) 760-4523
[Infraspection Institute Div. of T/IR Systems](#) Burlington NJ (866) 228-4788

[IRISYS/ InfraRed Integrated Systems](#) Northants UK 44-1327-357824
[ISG Thermal Systems USA, Inc.](#) Lawrenceville GA (877) 733-3473
[ITR, Inc.](#) Bethlehem PA (800) 360-3594
[Jersey Infrared Consultants](#) Burlington NJ (800) 772-6017
[Maintenance Technologies Intl](#) Milford CT (800) 510-0181
[Measurements/Emspec](#) New Orleans LA (800) 520-1586
[Midwest Infrared Services Inc.](#) Somerset Center MI (866) 309-6596
[Mikron Infrared, Inc.](#) Hancock MI (888) 506-3900
[Monroe Infrared Technology, Inc.](#) Kennebunk ME (800) 221-0163
[NPM Services Inc.](#) Bowling Green KY (866) 315-2667
[PMCI](#) Elk Grove Village IL (800) 222-7624
[Palmer Wahl Instrumentation Group](#) Asheville NC (800) 421-2853

[Predict Monitoring Systems Inc.](#) Welland ON (800) 234-2345
[Predictive Maintenance Inspection](#) Madison AL (256) 721-0100
[Predictive Service Corp.](#) Cleveland OH (866) 772-6770
[Predictive Technologies Inc.](#) Pittsford NY (800) 842-8401
[Raytek, a Fluke company](#) Santa Cruz CA (800) 866-5478
[Snell Infrared](#) Montpelier VT (800) 636-9820
[Snell Inspections](#) Montpelier VT (800) 636-9820
[Thermal Trend](#) Seattle WA (800) 800-8178

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Thermoscan, Inc.	Burr Ridge IL	(800) 833-1740
Thermotest, Inc.	San Rafael CA	(800) 640-3133
Universal Utility Services, LLC	Amarillo TX	(806) 378-4185